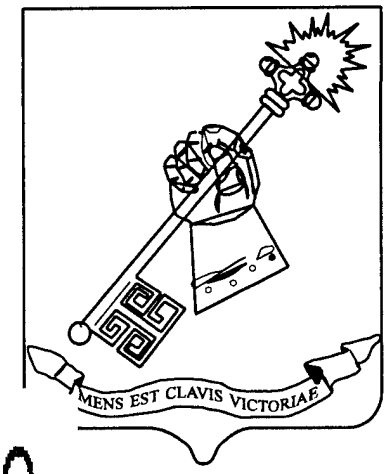
# WHY JOHNNY CAN'T DISMOUNT: THE DECLINE OF AMERICA'S MECHANIZED INFANTRY FORCE

A Monograph
By
Major Edward G. Gibbons, Jr.
Infantry



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# ABSTRACT

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The Bradley Infantry Fighting Vehicle's (BFV) introduction in 1983 inaugurated a fundamental change in the perception of the mechanized infantryman's role in combat. For the first time, the mechanized infantry company/team possessed the requisite organic firepower to support the maneuver of its dismounted infantry while simultaneously supplementing the anti-armor firepower of its accompanying tanks. The thesis of this paper is that the price for this capability is a focus on gunnery training at the expense of dismounted infantry individual and collective tasks -- recognized prior to the Bradley's introduction as the core element of the mechanized infantry company's contribution to the combined arms team.

In the introduction, the monograph introduces a definition of combined arms taken from the 1982 edition of FM 100-5 that states "Combined arms is defined as two or more arms in mutual support to produce complementary and reinforcing effects that neither can attain separately." Using this criteria, the monograph then examines the theoretical and doctrinal basis for the effectiveness of the combined arms organization and the role of the mechanized infantryman on the battlefield.

In the section that follows, the explanation of complementary and reinforcing effects is expanded, and its evolution in doctrine is explored. An examination of the fighting doctrine and training doctrine pertaining to mechanized infantry follows. Finally, using CTC observations and indicators from recent mechanized infantry command experience, the monograph evaluates the current level of dismounted mechanized infantry proficiency. The monograph ends by offering several changes to the current training program for mechanized infantry units to enable them to train and fight more effectively as combined arms organizations.

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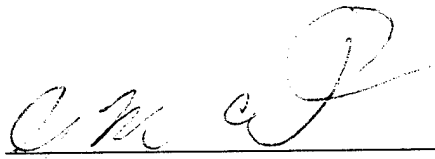

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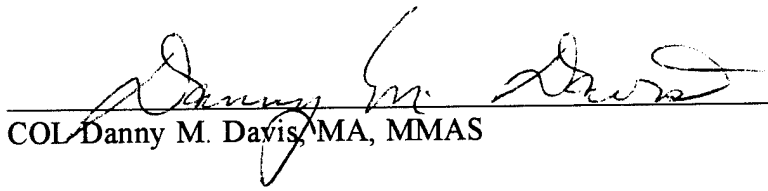

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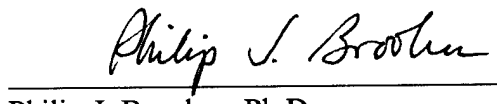

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## Introduction

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Though often used, the term combined arms itself requires precise definition. This paper employs the version included in the 1982 edition of FM 100-5, Operations, as "two or more arms in mutual support to produce complementary and reinforcing effects that neither can obtain separately." Included in this definition are two key concepts that require further clarification. The first is that of complementary and reinforcing effects. The 1982 version of FM 100-5 states that reinforcing combined arms are those capabilities or systems used to supplement an already existing capability or system of another arm to create a cumulative effect. On the other hand, complementary combined arms seek to integrate wholly different systems or capabilities to complicate and multiply the types of threat facing an opponent. Or, as the definition states, provide "effects that neither can attain separately."[2] Thus, as an enemy counters one threat, he is simultaneously faced with another, presenting him with a dilemma. This dilemma forms the heart of the second key concept, mutual support. Employed together, the various

arms compensate for each other's weaknesses while simultaneously allowing all arms to maximize their own survival and effectiveness. Inherent in this definition of mutual support is an enabling concept, that of *simultaneity*. The dilemma is only present when the effects of complementary systems are employed simultaneously in time and space. If arms or weapons are employed separately, or *sequentially*, the opposite of simultaneity, then the enemy gains the opportunity to defeat them in detail. The mutual support inherent in the combined arms team creates a synergistic effect, recognized in the 1993 edition of FM 100-5, "Combined arms warfare produces effects that are greater than the sum of the individual parts."[3]

These two characteristics form the crux of the training dilemma. The concept of combined arms indicates that synergy is derived from the simultaneous combination of complementary effects. Applying the concept to training, this means developing the infantryman's ability to fight dismounted in concert with the firepower of tanks and BFVs. This paper asserts that, in fact, the training focus is just the opposite. Rather than preparing to execute their complementary dismounted mission, mechanized infantry companies instead concentrate on vehicular gunnery tasks, a supplementary effect that reinforces an inherent capability of the tank. The significance of this assertion is that this practice ignores the lessons of both history and theory, jeopardizing the ability of mechanized infantry units to fulfill their battlefield role of dismounted combat.

This examination of mechanized infantry's training focus begins by establishing the theoretical and doctrinal basis for the effectiveness of the combined arms organization. The various means and methods employed since the start of World War II are examined to

determine why changes in combined arms organizations occurred and why they were or were not successful. The same discussion establishes a consensus for the primary roles of the various arms, restricting the discussion to armor and infantry at the battalion task force and company/team levels.

Included in the initial chapter is a historical examination of the Israeli Defense Force's (IDF) operations in the Yom Kippur War of 1973. This case study illustrates the consequences of the IDF's failure to employ mechanized infantry in a role previously validated by both theory and practice. This operation is relevant to the discussion for several reasons. First, it is a recent example of a mid-intensity conflict that employed most, if not all, of today's weapon systems. Second, it occurred under conditions of terrain and climate that FM 100-5 asserts are most conducive to armored warfare. Third, the IDF's opponent was similar in organization and training to those that the U. S. Army currently trains its heavy forces to fight. Last, and most important, this conflict provided significant and well documented lessons-learned for the IDF, specifically in the areas of doctrine, training and organization, that led directly the development of the BFV. The result of this discussion will be the establishment of the link between combined arms theory and practice.

Next, the paper reviews the Army's doctrinal publications (FM 7-7J, FM 71-1, FM 71-2, and others) to determine the anticipated missions of mechanized infantry company teams and their subordinate platoons. This discussion also addresses how closely these roles align with the above definition of combined arms to assess the doctrine's validity. Following this, the monograph determines how the mechanized company is expected to

prepare for these missions through an examination of the Army's corresponding training doctrine for the company. The examination includes a review of training requirements and resources provided from publications such as the Standards in Training Commission (STRAC) document, FM 23-1, Bradley Fighting Vehicle Gunnery, and others to determine the means and methods used to gain the proficiency required to execute doctrine.

In the section that follows, the major portion of the work, the monograph reconciles the application of resources to training with the intended employment of the company in combat. Using CTC observations and indicators from recent mechanized infantry command experience, the monograph highlights the current level of dismounted infantry proficiency. This section concludes by proposing several changes to the current training program for mechanized infantry units. By limiting itself to the issues inherent in training for combined arms employment, the monograph does not address other, associated problems. These include such issues as Bradley company and platoon force structures and unit TO&Es; the monograph's focus is on training the mechanized infantry force as it currently exists.

## Chapter 1

## Historical Overview of Tactical Combined Arms

This chapter addresses the development of the armored combined arms formation from the beginning of World War II to the introduction of the Bradley Fighting Vehicle in 1983. The purpose of this examination is to illustrate why and how combined arms have been successful in battle, and the role that mechanized infantry played in this process. In the

end, it will answer the following question: How do mechanized infantry units contribute to the achievement of synergy by the combined arms team?

The Watershed: World War II

At the time of the German invasion of Poland in 1939, each of the four major European powers fielded one or more armored divisions. Theoretically, their organization and tactics reflected one of two prevailing schools of thought. The Allies, especially Britain, were most heavily influenced by the writings of J.F.C. Fuller and Basil Liddell Hart. These men founded what came to be known as the "all-tank" school, whose central theme was the dominance of the tank in land warfare. As House suggests, infantry's role was clearly subordinate, required only to consolidate gains made by the action of armor.[4] As a result, the complementary effects of combined arms were not embraced as a necessary criteria for tactical success; armored firepower was substituted in its place.

The German Army represented the opposing view, initiating its armored development along similar lines, but diverging during the thirties as a result of extensive experimentation with mechanized forces by General Heinz Guderian, father of the *panzerwaffe*. Their theory of combined arms relied much more heavily on the action of all arms to achieve success. Though it too envisioned infantry in a subordinate role, the training of German units and staffs facilitated a more flexible employment along complementary lines.[5]

By 1943, these same combatants as well as the U.S. had transformed their mechanized forces into flexible formations composed of a balance of different arms and services.[6] As the war ended, each combatant relied on the simultaneous, routine integration of infantry, armor and other arms to achieve success through mutual support at the tactical level.

Germany's experience in many ways exemplifies that of all the major European combatants of World War II.[7] The *Wehrmacht* arguably began the war with the most mature doctrine of combined arms. General Chuikov, the defender of Stalingrad, believed that the success of German tactical methods "stemmed from a superior coordination of all arms, none of them in themselves of outstanding quality."[8] As the war progressed, German defensive operations became much more difficult as their already unfavorable force-to-space ratio decreased. Massed Soviet tank attacks actually increased the importance of infantry in this situation. English notes that infantry was the backbone of the "hedgehog defense," containing Soviet penetrations and allowing the tanks to counterattack.[9]

With respect to mechanized infantry in particular, a clear trend emerged in World War II involving the footsoldier's perceived contribution to the team. The "all-tank school" of mobile, protected firepower reduced the infantry's mission to that of an adjunct to the tank. Combat experience, however, invalidated this notion as evidenced by the increase, in every army, of the proportion of infantry to tanks in its armored formations.[10] Rather than fulfilling the role of an auxiliary, the infantry's status became that of an equal. According to one German commander, this was so important that "it is even said by some that commanders would prefer to lose tanks rather than their infantry."[11] Significantly, the soldier mentioned here is *dismounted*, transported into battle to fight *on foot* alongside the tank. Allied experience was not different.

During the war, the U.S. Army also reorganized its armored division based on combat in North Africa. It progressed from a structure containing six armor and three infantry

battalions to a balanced mix of the arms.[12] In Patton's view, this mix was still inadequate. He advocated that "the armor divisions should have at least two armored infantry battalions for each tank battalion."[13] Tactical mobility resulted from the infantryman's ability to assist armor in eliminating increasingly sophisticated anti-tank defenses and the tank's ability to protect its infantry from enemy armor. Through trial and error, the combatants validated the process of tactical integration to achieve mutual support; training for the complementary effects of infantry-tank cooperation provided the key.

The Post-War Era: The German, U.S. and Soviet Dynamic

Considerable consensus existed at the close of the second World War regarding both the strengths and weaknesses of mechanized infantry. Experience confirmed that this arm needed increased mobility to allow it to keep up with tanks until required to dismount, and overhead protection from artillery for its vehicle troop compartments.[14] An additional requirement, first identified by the *Bundeswehr*, was the provision of greater infantry vehicular firepower to reinforce that of the tank during fluid, mounted combat.[15] Incorporation of these lessons by the various post-war armies led first to the production of armored personnel carriers, ultimately resulting in the development of the current varieties of infantry fighting vehicles.

For the major users of mechanized troops, Germany, the U.S., Britain, and the Soviet Union, this development process acted on them and their allies as a dynamic force. In the absence of conflict, the impetus for change derived largely from domestic constraints and what others were doing, not on identifying if or how battlefield requirements had altered since the war. For example, the German Army's development of the Marder and the

introduction of the BMP by the Soviets affected U.S. Army decisions to procure an infantry fighting vehicle. Richard Simpkin summarizes this U.S. progression by caricaturing the American attitude as, "Well, I guess we have to have this MICV, 'cos everybody else has one so otherwise we'll be disadvantaged."[16] At the same time, he avers that British post-war doctrinal evolution owed its genesis to manpower and fiscal constraints.[17] Simpkin further suggests that the Soviet formula of combat development is not concept-based but instead adapts tactics to technological progression in a process that "matches the state of the art with the skills of the user -- and then finding out how best to employ that product."[18] This interactive process served as the engine for innovation in the post-war era, playing a major role in the evolution of combined arms practice and training as each potential combatant reacted to what the other was doing.

From 1945 until the advent of the nuclear age, the Soviet Army based its doctrine on the lessons of the great war, with artillery providing massed firepower in support of combined arms attacks by infantry and tanks.[19] As they developed their nuclear weapons' capability, Soviet tactical doctrine and force structure shifted toward armored exploitation of the effects of battlefield nuclear weapons. Ground forces centered around the tank relied on speed and firepower to attain objectives deep in the enemy rear. In this scenario, Soviet tacticians perceived little opportunity for dismounted infantry combat.[20] As a result, they initiated the development of the BMP, a vehicle allowing infantry to fight while mounted but permitting them to dismount if required to overcome residual enemy defenses.

In the 1960s, Soviet planners gradually realized that nuclear warfare was no longer a suitable formula on which to base their tactical doctrine. As a result, throughout the 1970s they shifted their tactics and force structure away from nuclear exploitation to a theory based on a rapid conventional campaign centered once again on the integration of combined arms.[21] At every echelon, from army to division, motorized infantry as a proportion of total forces was increased, in some cases almost doubled. According to English, "whereas the ratio of tank to motor rifle divisions in the Red Army was 1 to 1.8 in the early 1960s, it had been reduced to 1 to 2.2 by 1974."[22] Additionally, each tank regiment received a motorized rifle battalion organic to its force structure.[23] Significantly, half of this infantry relied on the BTR as a conveyance, not the BMP. The Soviet aim was not an augmentation of vehicular firepower, but an increase in infantry on the ground to sustain the offensive against a NATO defense system untouched by nuclear bombardment.[24]

As they passed through the nuclear age, the Soviet Army looked backwards for guidance on how to fight. The government allowed several WWII commanders to publish their wartime experiences to highlight the continuing relevance of the tactics and techniques of that conflict.[25] The approach selected was the same as that learned in the great war -- combined arms forces, trained to operate closely will provide the mobility and tempo required to defeat a cohesive anti-armor defense. In English's words,

> There is apparently no argument about the effectiveness of modern antitank weaponry in Soviet circles . . . this means that tanks without infantry support attacking an unreduced defensive position sited in depth will be destroyed.[26]

Here, the complementary effects of combined arms are the key to success in a fast-paced, armored battle. The dismounted infantryman in simultaneous action with the tank is the defeat mechanism of choice.

As the nation primarily concerned with a Soviet attack on Western Europe, Germany paid close attention to the Red Army's development of tactics and force structure. As it rearmed in the 1950s, the *Bundeswehr* initially considered itself to be the offensive striking arm of NATO, developing itself into a highly mechanized force in the process.[27] For this reason, it was the first NATO army to develop an IFV, the Marder, allowing true mounted combat for its *panzergrenadiers*. As the Soviets fielded the BMP and NATO adopted a strategy of forward defense in Germany, this reinforcing capability of the infantry evolved more and more into that arm's primary role. High numbers of anticipated armored targets combined with shallow operational depth to shift German combined arms theory towards one of firepower over maneuver. Quoting German operational doctrine from 1973, "with fire, the defender can achieve a superior effect against the enemy who is compelled to move . . . the annihilation of enemy tanks is of decisive importance."[28] This was less a conscious decision to ignore the lessons of WWII than it was a reaction to the threat of being overwhelmed by massed Soviet armor. Marder firepower was perceived as critical to this anti-tank battle.[29] The flaw in this vision is the failure to account for the high numbers of Soviet dismounted infantry available to complement their admittedly large tank force.

For the U.S. Army, interest in mechanized combined arms warfare waned in the aftermath of the second World War. Aside from fielding a series of more mobile and protected APCs, U.S. armored doctrine and practice remained virtually unchanged until the end of the war in Vietnam.[30] Vietnam's end prompted a reexamination of the type of future war for which the army must prepare, centered on the growing Soviet armored threat to Western Europe. As the army's focus shifted back to conventional, combined arms warfare primarily conducted by mechanized forces, the 1973 Yom Kippur War provided a modern example of how such a war might be fought.[31] From this conflict and a reliance on previous German experience, U.S. planners, especially General William DePuy, derived a theory of armored warfare centered once again on combined arms, but one in which "tanks remained the decisive elements in ground combat."[32] This theory was the springboard for a concept-based development program that eventually resulted in the requirement for the Bradley Infantry Fighting Vehicle.[33] Because of the seminal influence of the Yom Kippur War on the U.S. Army and its mechanized doctrine in particular, the consideration of that conflict merits a more detailed analysis.

The Israeli Experience -- The Yom Kippur War of 1973

The experience of the Israeli Army in the Yom Kippur War of 1973 offers a relevant example of the consequences of failing to employ combined arms effectively. Basing its doctrine on the supremacy of the tank, the Israeli Army was deficient in its combined arms doctrine, training, and organization. In this conflict, it ignored the benefits derived from the simultaneous application of complementary effects. Instead, a firepower-based

formula of sequential operations forced it to suffer unnecessary losses at the hands of an army that was less well trained.

Israeli mechanized doctrine and organization at the time of the Yom Kippur War was the brainchild of General Israel Tal, architect of the Israeli armored corps in the 1960s. At heart, Tal's ideas reflected the "all-tank" school of protected firepower. Championing the supremacy of the tank, he rejected the concept of the combined arms team as a "European tactic" irrelevant to the open spaces of Sinai. Infantry was an adjunct to the tank, required only for mopping-up operations in the wake of the armored advance.[34]

The result of this philosophy was a dearth of resources devoted to mechanized infantry, itself forming a part of the armored corps. At the time of the 1973 war, most mechanized infantry units were not in the active component, but in the reserves.[35] Its equipment was sub-standard, and its training was not of the same caliber as that of its armor counterpart. Not only was infantry-specific training lacking, but combined arms training was almost nil, since the infantry was not expected to fight as part of the team.[36] Instead, tank gunnery, more than any other element, was viewed as the critical element of success in suppressing and destroying enemy vehicles and anti-armor systems.[37] According to English, "The harsh truth was that mesmerization with firepower and armor had induced, if not a myopic view of the worth of infantry in general, at least a benign neglect of valued infantry skills."[38]

At face value, the Six Day War of 1967 validated Tal's precepts. The armored exploitation to the Suez canal overshadowed the meticulously planned Israeli combined arms attacks against the Egyptian Sinai defenses that made it possible.[39] Against a

completely outclassed opponent, the "conveyor-belt" combination of tanks with close air support seemed to be the solution for any future Arab-Israeli conflict.[40] The 1973 war illuminated the flaws in this argument.

At the time of the Yom Kippur War, the Egyptian Army was a completely different organization than in 1967. Recognizing their inability to fight a fluid armored battle in an environment of Israeli air superiority, they made several changes to their doctrine to set the conditions of battle in terms favorable to them. The Egyptian commanders realized that their infantrymen were especially tenacious in the set-piece defense.[41] Accordingly, they acquired large numbers of effective infantry anti-armor systems including both short and long-range weapons such as the RPG-7 and AT-3 Sagger.[42] Exhaustive training with them removed their infantry's fear of fighting unaccompanied Israeli armor. Supported by extensive artillery fires and an integrated SAM umbrella, the Egyptians initiated the conflict by rapidly crossing the canal, penetrating a few kilometers inland to seize key terrain, and digging-in.[43] The Israeli Army was unprepared for the kind of fight that faced it on the banks of Suez.

The Israeli operations of 6-8 October against the Egyptian bridgehead typify the problems inherent in their doctrine. Initially, the quick-reaction armored division present in Sinai counterattacked the Egyptian bridgehead on 6 October. An almost completely tank-pure formation, it advanced headlong against an Egyptian defensive system that destroyed it through a combination of long and short-range infantry AT fires.[44] On 7 October a fresh armored division, also lacking much of its organic infantry, attacked to sever the Egyptian Army from its lines of communication and suffered the same fate as

its predecessor.[45] In all, by 8 October Israeli forces had failed to dislodge their opponents and had suffered losses of over 400 tanks in the process. At this point, high casualties and a decision to concentrate on the defeat of the Syrians in the Golan halted Israeli operations in Sinai. According to Luttwak and Horowitz, " . . . the truth had finally filtered back, and with it the realization that the quick solution of all-armour attacks would no longer work."[46]

This initial Israeli defeat occurred due to their pre-war policies that ignored the principle of combined arms. Israeli armored commanders generally held the infantry force in low regard. Indicative of this belief is the fact that the infantry units of the active division in Sinai were not mobilized at the time of the invasion. This relative priority extended to the infantry components of the reinforcing divisions, who placed their infantry battalions at the trail of their march tables. Generally untrained in the techniques of tank-infantry cooperation and arriving late in theater, Israeli mechanized infantry played a limited role in the ultimately successful counteroffensive.[47] By the time of this operation, Israeli commanders found improvised solutions to their various problems. Significantly, this included the incorporation of airborne brigades (a separate branch of the ground forces) into their divisions, in some cases as armored infantry, because of the low esteem that they had for their own mechanized infantry components.[48] Though the Israelis won the war, the conflict ended amidst an atmosphere of grave concern over the army's combined arms doctrine, organization, and training.[49]

The Israeli experience in this conflict is particularly valuable for an army that bases its doctrine on the principle of combined arms. Like the early practitioners of armored

warfare, the IDF assumed that mobile, protected firepower provided the answer to tactical mobility. Armor would seek or create a weak point in the enemy defenses. Following the breakthrough, a fluid battle in the enemy rear would facilitate the enemy's destruction through maneuver. Mounted infantry followed the tanks, "mopping-up" isolated and by-passed enemy units previously over-run. As a result, the focus of their doctrine was on the tank, and the emphasis of their training was on gunnery -- a reinforcing effect for the combined arms team. Even though they arguably possessed the best tank gunners in the region, their gunnery skills could not guarantee success in a war in which their opponent exploited Israeli weaknesses in combined arms training.

In essence, the Israelis had to re-learn the lesson that the mutual support derived from simultaneous infantry-tank cooperation remains the core principle of combined arms warfare at the tactical level. Their sequential doctrine just could not provide the complementary effects required for the generation of synergy -- the "dilemma" that these effects present to an opponent. The Egyptians, on the other hand, exploited this knowledge to Israel's detriment. Ultimately, the IDF was *forced* into a position of having to achieve synergistic effects through improvisation rather than design. Instead of planning opportunities for their tanks and infantry to work together, they adopted them out of expediency.

The final lesson is that training, the cornerstone of preparedness, must stress from the start the principles of complementary effects to achieve mutual support. The mere fact that infantry and armor are present in the same action does not ensure that synergy will result. Only if the *source* of synergy is universally recognized, and the techniques that

produce it are trained for, can complementary combined arms produce "effects that are greater than the sum of the individual parts."[50] Without training, the parts acting alone or even in concert are insufficient.

Influence of the Yom Kippur War on U.S. Doctrine

The U.S. Army relied on 1973 Israeli experience to a great extent, but did not accept the premise that dismounted infantry played the decisive role that English, House and others recognized. Instead, taking a page from the *Bundeswehr*, Depuy and his assistants decided that the firepower of a Marder-like vehicle best served the needs of a combined arms force for the same reasons espoused by the Germans. Israeli experience seemed to bear this out, as observers attributed their defeat to a lack of infantry support for their tanks in fighting Egyptian infantry. Depuy reasoned that combined arms, in this case the reinforcing effects produced by the firepower of infantry fighting vehicles, was necessary to suppress enemy infantry anti-tank systems to allow tanks to maneuver. As Herbert relates:

> For example, the Israeli experience suggested that mechanized infantry had to participate directly in the tank battle by using on-board automatic weapons to suppress the enemy's ATGMs. . . . To Depuy, the best vehicle (for this task) was the . . . mechanized infantry combat vehicle (MICV), . . . one of the Army's top procurement priorities for 1973.[51]

General DePuy correctly realized that the Israeli defeat was due in large part to a lack of infantry support. It was his interpretation of the form that this support should assume that was flawed. If Israeli tank firepower failed to suppress ATGMs and infantry, how was more armored firepower from an IFV going to solve the problem? Like the Germans,

U.S. doctrine shifted to the application of mobile firepower, a reinforcing effect, and away from the concept of mutual support derived from complementary effects -- the actual lesson of the '73 war.[52]

Post-1973 Assessments of Mechanized Infantry

In his article "When the Squad Dismounts," Richard Simpkin provides a summary of the theories of the three armies under consideration in the early 1980s regarding the role of mechanized infantry and its support vehicle. Writing in 1983, his thesis is that as long as the infantry remains mounted there is little controversy regarding its role. Essentially, it fires and maneuvers alongside tanks until required to dismount. For Simpkin, the crux of the problem arises from the question of how the infantry and its carrier fight once the two separate.[53]

To this end, he posits three competing demands placed on the infantry's conveyance once it disembarks its passengers. He links each of these demands to a particular country's practice to provide examples of how that imperative translates into actual employment. These practices broadly mirror the respective armed forces' philosophies regarding combined arms warfare and are as follows:

> • Conservation: (Pre-BFV U.S. Army) Once dismounted, the infantry squad fights supported by tanks. The APC/IFV is removed from action to assure its availability to re-embark the dismounts.
> • Support: (Soviet) In conjunction with tanks, the IFV provides close, direct fires in support of its dismounted infantry.
> • Independent: (*Bundeswehr*) Employing the IFV as an independent armored vehicle weapons platform once the infantry has dismounted.[54]

Each technique roughly corresponds to the degree of priority attached to dismounted infantry's role in the combined arms battle. Simpkin tells us that:

> The IFV concept matches the mobile, tank-dominated concept of operations that gave rise to it. . . . the handling of unladen IFVs offers the tactical commander an awkward choice: He must decide how far to exploit the IFV's firepower, accepting the concomitant risk, and how far to uphold the protected mobility of his infantry.[55]

As the infantryman's contribution increases, greater emphasis devolves on the retention of his conveyance and its ability to support him in action. The view attributed to the Soviet Army (according to Simpkin residing at a point between "conservation" and "support")[56] most closely resembles that of validated wartime experience. The tactics illustrated by the *Bundeswehr,* on the other hand, tend more towards that of the "all-tank" school of the pre-World War II era. Especially in its defensive doctrine, "the Germans place very little emphasis on the direct support of dismounted infantry."[57] As will be seen below, the closer an army moves towards the independent action of armored vehicles and infantry, the further it strays from the complementary effects achieved through simultaneous, mutual support.

For theorist Richard Ogorkiewicz, this is the breakdown in logic that occurs as an army ignores the historical imperatives inherent in the evolution of combined arms at the tactical level. In his article "Mechanized Infantry," he traces the development of that branch, identifying its progressive stages as solutions to battlefield requirements as opposed to reactions to technological innovation. Regarding independent action of armor and infantry, he states, "the independent employment of MICVs makes little sense

because wherever they can operate, tanks can also operate and can perform many tasks better."[58] Implicitly assuming the validity of the role of the tank on the modern battlefield, Dr. Ogorkiewicz believes that "wherever fighting can be carried out from vehicles, there is hardly any task that battle tanks cannot do much better than MICVs."[59] His ultimate aim is to establish the infantry's position firmly in terms of complementary effects which the tank is unable to achieve. In no uncertain terms, he states:

> There is, therefore, no rationale for the existence of mechanized infantry except in combination with tanks, which they can complement, but which they cannot effectively replace. [60]

In his view, the tank is the primary provider of mobile, protected firepower under conditions where operations are fluid and fighting is primarily mounted. At close quarters, however, the tank is at a disadvantage that only the presence of infantry can mitigate. It protects the tank and facilitates its advance under those circumstances in which the tank can not fight alone.[61] This is the essence of complementary effects, validated by wartime experiences that mandated a co-equal role for infantrymen fighting on foot to ensure the tactical success of the combined arms team.

This chapter examined the ingredients required for the successful application of combined arms. Beginning with the ideas of the early "all-tank" theorists, it demonstrated that their operational focus led to a formula for combined arms stressing mobile firepower over mutually supporting arms. In action against the more mature doctrine and training of the German army in World War II, this formula failed due to its sequential employment of arms at an echelon that prevented the achievement of simultaneous, complementary

action. Carried forward into the post-war years, this wartime principle of combined arms underwent a dynamic revision as its major adherents attempted to cope with perceived changes in both technology and practice. Analysis of the 1973 Israeli experience resulted in a greater role for mechanized infantry, but erroneously emphasized its mounted contribution to armored combat. As a result, each army fielded newer IFVs aimed at increasing the infantry's relevance to the mounted battle at the expense of the synergy derived from its dismounted, complementary function. They did so not in response to a change in battlefield conditions, but by narrowing their threat focus to the extent that their fear of massed armored vehicles masked their ability to see their equally lethal cargo -- the infantryman.

For the U.S. Army in particular, this fixation on a mechanized scenario in only one region[62] exacerbated the problem, since this concentration ignored the requirement for dismounts in other theaters like Korea. By failing to consider armored operations in other geographic areas against opponents with differing doctrines and force structures, the Army voluntarily limited the utility of its mechanized infantry force. Like the Israelis and others before it, the U.S. Army of the 1970s opted for the ability of vehicular firepower to win under all conditions, an assumption that history does not support.

In the following chapter, the U.S. Army's doctrine will be examined to ascertain the current state of its combined arms employment and training. Its aim will be to determine the extent that American theory and practice matches the theoretical development previously outlined and achieves mutual support through complementary effects.

## Chapter 2

## Current U.S. Doctrine: How to Fight vs How to Train

As stated in the introduction, this paper accepts the definition of combined arms included in the 1982 version of FM 100-5, Operations. This edition provides a conceptual basis not only for the utilization of combined arms, but also *why* and *how* their employment results in successful combat operations. The text states that: "The term *combined arms* refers to two or more arms in mutual support to produce complementary and reinforcing effects that neither can achieve separately."[63] The doctrinal key to this interpretation is the simultaneous use of both weapon systems and units of *differing* characteristics to achieve *mutual support*. In Operations, this is referred to as the technical and tactical coordination of combined arms.[64]

Technical combined arms employment consists of the coordination of *weapon systems* of differing characteristics. An example is the use of machineguns and mortars together to interdict enemy breaching operations. The concept of tactical combined arms, on the other hand, encompasses the application of *units* with varying capabilities. An example is the maneuver of armor and infantry supported by indirect fire and engineers.[65] For FM 100-5, this aggregation of weapons and arms of disparate characteristics is the wellspring of mutual support, the result of the *complementary effects* of combined arms. Quoting the text, "*Complementary combined arms should pose a dilemma for the enemy* (italics original). As he evades the effects of one weapon or arm, he places himself in jeopardy of attack by the other."[66] Thus, mutual support is the product of multiple threats posed by

weapons and units whose *varying* characteristics prevent the enemy from concentrating against one arm with impunity.

The 1982 edition of FM 100-5 further explains the *reinforcing* effects of combined arms as operations in which one weapon or arm can "supplement the effects of another to achieve a cumulative effect. This massing of effects is also discernible at both technical and tactical levels."[67] A simple example is the supplementary effect of mortars and artillery fired at the same target; like clearly reinforces like. While valuable, this characteristic is not the source of *synergy*, but rather of mass. As illustrated in the preceding paragraph, synergy derives from the simultaneous use of differing, mutually supporting arms or weapons to create the "dilemma" referred to above; reinforcing arms and weapons aim at producing cumulative effects towards a similar end.

The discussion of combined arms in the 1982 edition of FM 100-5 does not introduce any new ideas. Rather, as shown in the previous chapter, it reflects the wartime experience of all major armored combatants since World War II. These concepts further manifest themselves in subsequent editions of FM 100-5, though without the level of supporting detail provided by the 1982 version. In 1986, AirLand Battle remained committed to combined arms warfare, stating that "Commanders must understand the basic capabilities of each arm as well as the complementary and reinforcing effects of combined arms to employ AirLand Battle doctrine."[68] Though repeatedly used in this context, this edition fails to define how and why these effects are achieved.

The 1993 edition is similar in its lack of detail. Like its predecessors, it states the Army's preference for combined arms warfare and the synergy it creates. "Combined

arms warfare produces effects that are greater than the sum of the individual parts."[69] Though it presents the above definition of synergy, it does not associate the word with the definition (it is not mentioned in the text on combined arms), nor does it describe the mutually supporting, complementary effects required to achieve it. Instead, Operations seeks to illustrate its meaning by providing an example in which the simultaneous employment of maneuver forces and fires from multiple directions are used to "confuse, demoralize, and destroy the enemy with the coordinated impact of combat power."[70] Reminiscent of the "dilemma" of the 1982 edition, Operations ends by stating that "the enemy cannot comprehend what is happening; the enemy commander cannot communicate his intent or coordinate his actions."[71]

Though the discussion of the topic goes from a full page in 1982 to two paragraphs in 1993, the Army's doctrinal commitment to combined arms warfare and its inherent synergy remains. Changes occurred at the level of detail provided to show how and why combined arms work, not what they were expected to achieve. Synergy and mutual support remain valid concepts, though without the detailed examination of complementary and reinforcing effects and the benefits they provide. At heart, the Army still believes in the synergistic application of combined arms. But, by reducing the text in FM 100-5 devoted to combined arms from a full page in 1982 to two paragraphs in 1993, it deleted from its capstone doctrine a detailed analysis of how this is achieved and why it is successful.

This paper offers two final concepts used to judge the effectiveness of combined arms, *simultaneity* and *sequentiality*. Implicit in the 1982 definition of complementary effects is

the idea that they require *simultaneous* application in order to create the requisite mutual support.[72] This is explicitly endorsed in the 1993 version in its definition of combined arms warfare as "the simultaneous application of combat, CS, and CSS toward a common goal."[73] Conversely, the products of the various arms and weapons that are not applied simultaneously are applied *sequentially*. Sequential employment represents the tactical practices of the "all-tank" school prior to World War II, when infantry and tanks attacked or defended as separate elements. As shown in the preceding chapter, these ideas were discarded as a result of combat experience that highlighted the necessity for mutual support. Thus, simultaneous employment is a prerequisite; arms or weapons employed sequentially, without regard for the creation of multiple threats, do not meet the criteria for producing complementary effects and therefore synergy.

Fighting Doctrine

At the tactical level, companies and platoons expect to fight as combined arms organizations. Applying the criteria of complementary effects to produce mutual support and synergy within these formations, it is possible to conceive how this is achieved with mechanized infantry and tanks. Tanks epitomize the concept of mobile, protected firepower, forming the primary arm of the combined arms team during mounted combat. Mechanized infantry's role, however, is more ambiguous. When its infantry element is mounted, the BFV's firepower supplements that of the tank -- a reinforcing effect. It is only when the infantry dismounts that its contribution becomes complementary. For the mechanized infantry company team to benefit internally from synergistic effects, it has to dismount its infantry.

The U.S. Army's published doctrine increasingly emphasizes this concept as the echelon of the manual decreases. Both FM 71-3, Armored and Mechanized Infantry Brigade, and FM 71-2, The Tank and Mechanized Infantry Battalion Task Force, agree that combat power is enhanced through task organization as combined arms teams, though without addressing why this is desirable.[74] In the offense, they state that assaults may be both mounted or dismounted, describing a sequential employment of armor and infantry forces. The simultaneous employment of infantry and tanks on the objective is not mentioned in FM 71-3, but is referred to by FM 71-2 in the event that "strong enemy resistance . . . from close-range anti-armor weapons" is present.[75] The manual thus tells the commander to employ the dismounted assault based on the anticipated risk to his tanks; not because a synergistic effect will result. Defensive operations stress the reinforcing effects of vehicular direct fires. The focus of dismounted infantry is on enemy dismounted forces.[76] The manuals' perception of mutual support in the defense derives from reinforcing effects, not synergistic effects; like forces are expected to engage like forces.

This view is fundamentally altered in FM 71-1, The Tank and Mechanized Infantry Company Team, and FM 71-123, Tactics and Techniques for Combined Arms Heavy Forces: Armored Brigade, Battalion Task Force, and Company Team. Though they do not directly address the concepts of synergy or mutual support, the tactics and techniques of infantry/armor employment described reflect these principles. In the offense, both manuals accept that assaults will be primarily dismounted unless conducted against very weak anti-armor opposition. According to FM 71-1, "An assault is most

often conducted by tanks, dismounts, and BFVs. Mutual support between tanks, BFVs, infantry and fire support must be maintained."[77] Each view mechanized infantry's contribution as primarily dismounted, occurring within the context of a simultaneous action. They vary only in their consideration of which system, the tank or the BFV, provides vehicular firepower.[78] FM 7-7J, Mechanized Infantry Platoon and Squad (Bradley), echoes its parent manuals, reflecting FM 71-123's position with regard to the BFV's role in the offense.[79]

In the defense, these publications more closely follow the doctrine of their higher echelons. Discussion centers on the opposition of similar systems to defeat their enemy counterparts.[80] Only FM 71-1 offers any notion of the importance of dismounted infantry in its treatment of BFV positioning. Describing a situation of tension between achieving complementary or reinforcing effects, it counsels, "If there must be a choice between supporting the tanks or supporting the infantry, the BFVs usually will be positioned to support the infantry."[81]

In the fighting doctrine of the company team and mechanized platoon, a consensus exists regarding mechanized infantry's contribution to the combined arms team. In the assault, it is measured by its ability to intervene with its dismounts to simultaneously interact with the armored firepower of the tank and BFV. The principle of synergy through complementary effects is described, but not explicitly defined. According to FM 71-1:

> Combined arms assets are complementary, reducing vulnerability while making the enemy more vulnerable. As the enemy avoids the effects of one weapon, he exposes himself to attack by another.[82]

In the defense, the association is blurred, yet the inferred aim is to ensure that friendly dismounts prevent the *enemy* from achieving synergy by preventing a combined arms attack on the friendly defense. The next portion of this chapter examines the training doctrine for heavy forces. Its goal is to determine if in training, the unit's priorities reflect the consensus of roles advocated in how doctrine says we should fight.

Training Doctrine

The U.S. Army's capstone training manuals, FM 25-100, Training the Force, and FM 25-101, Battle Focused Training, require leaders to understand nine principles to effectively train their organizations. Three of these are particularly important in relation to combined arms warfare in Bradley units. As the first item on the list, the manuals admonish leaders to "Train as (a) combined arms and services team."[83] FM 25-101 further emphasizes the benefits of combined arms by stating that "The greatest combat power results when commanders synchronize combat, CS and CSS systems to complement and reinforce each other."[84] This advocacy of training as combined arms reflects the employment guidance in the HTF manuals, albeit without explaining the meaning of "complementary" and "reinforcing" as used in this context.[85]

This principle is followed by "Train as you fight." For the combined arms team, "Peacetime training must replicate battlefield conditions."[86] At the tactical level, the aim of this tenet is to ensure that the complementary action described in the HTF manuals is replicated in training. The Army's fighting doctrine repeatedly uses the example of infantry and tanks fighting in close combat, especially in offensive operations. Without

the practice advocated here, these arms do not gain the mutual support enunciated in their employment doctrine and validated by historical precedent.

Finally, the responsibility for training effectiveness is expressly assigned with "Make commanders the primary trainers."[87] Commanders must, in the words of FM 25-101, "personally observe and assess training at all echelons."[88] In addition, the doctrine states that "all leaders must . . . train the combined arms team to be proficient in its mission essential tasks." Leaders at all echelons are expected to be the key trainers in a combined arms context.[89] For Bradley units, this requirement entails the preparation of the unit and its soldiers for combat in accordance with the fighting doctrine, a doctrine that specifies the critical importance of dismounted infantry.

The relationship of leaders to the particular echelon of training is codified in FM 25-100 and 25-101. Officers are charged with the responsibility for unit collective training, while NCOs are primarily accountable for the instruction of individual soldiers. In addition, NCOs share the requirement to impart necessary skills to their sections, squads and crews. The goal is to ensure that the leader both trains and is trained with his assigned unit. *Commanders* are obliged to combine this soldier and leader preparation in the form of collective events.[90]

The purpose of the above analysis of leader roles and combined arms in FM 25-100 and 25-101 is to define the combined arms training environment. Doctrinally, the NCOs of the mechanized infantry company are responsible for the individual soldier training of BFV crews and dismounted elements. Platoon leaders share accountability for crew/squad training and bear sole responsibility for the collective preparation of these

elements at the platoon level. Company commanders ensure that squads, platoons, and leaders receive training within a combined arms context reflective of their employment in fighting doctrine. Primary guidance for specific measures of performance is contained in the next series of training publications, the Mission Training Plans (MTPs) for the Task Force (ARTEP 71-2-MTP), Company/Team (ARTEP 71-1-MTP) and Platoon/Squad (ARTEP 7-7J-DRILL).

The Training and Evaluation Outlines (T&EOs) contained in these publications provide the training criteria for all *collective* tasks that a mechanized unit must master to perform its wartime missions described in the "How to Fight" (HTF)-series manuals. An expectation therefore exists that the criteria for combined arms training in the MTPs and their employment described in the HTF-series are consistent. With some exceptions, this is in fact the case.

All of these MTPs share the same flaws. They advocate combined arms employment while failing to provide any guidance as to how and why it is successful.[91] The term mutual support is used in several contexts without rigorous definition.[92] No explanation of synergy or guidance for achieving its effects are included. Dismounted infantry retains its mission as the primary assault force against prepared positions and for protection of friendly armored systems from dismounted attack in the defense.[93] Like the HTF-series, as the echelon of the manual decreases, the relative importance of dismounted operations increases.

The consistency that exists between the collective training and fighting doctrines is not reflected, however, in the doctrine governing Bradley gunnery skills. The Standards in

Weapons Training document (STRAC), DA PAM 350-38, contains "standards, strategies and ammunition requirements for attaining and maintaining proficiency of soldiers, crews and units in gunnery skills."[94] While STRAC states that specific training practices may be modified, the qualification standards "are prescriptive (mandatory) and remain constant."[95] These qualification standards are supported by the gunnery training manual, FM 23-1, Bradley Fighting Vehicle Gunnery, that provides "a program to train and evaluate crew, section, and platoon proficiency in Bradley gunnery."[96]

The resulting guidance creates a tension in training within the mechanized infantry company. STRAC qualification standards for BFV units are virtually identical to the requirements imposed on armor units (see table 1).[97] A mandated number of crews must be periodically qualified on several events in order for the unit to conform to Army standards.[98] This injunction has two effects. First, company commanders and platoon leaders are integral members of a vehicle crew. This obliges them to reach and maintain the same level of proficiency imposed on their mounted elements, making demands on their available time to both supervise and evaluate vehicle *and* dismounted training. The second effect results from the stress on constantly manning crews to maintain gunnery standards. STRAC states qualification requirements numerically (table 1).

As a solution, FM 23-1 offers a parallel training strategy for vehicle gunnery and dismounted infantry extending from the individual soldier to platoon collective levels. Though effective in principle, it contains several inconsistencies. First, it ignores the platoon leader/company commander's requirement to both supervise and participate in gunnery. As a result, the ability of these key leaders to perform their roles in dismounted

training as outlined in FM 25-100/25-101 is brought into question. Second, the training of the two elements is predominantly parallel and not integrated. Units do not participate in gunnery events together until the section/squad exercise at the conclusion of crew qualification (Table VIII).[99] Thus, their ability to fight together as outlined in the employment manuals is not developed from the outset. Finally, it assumes that sufficient time and other resources exist for Bradley units to achieve a level of proficiency in gunnery comparable to an armor unit together with a commensurate level of dismounted proficiency. Though FM 23-1 states that "Dismounted infantry training is equally important as crew training,"[100] the parallel requirements of extensive gunnery training and dismounted operations make achieving this goal problematical.

This chapter's purpose was to examine the fighting and training doctrines applicable to mechanized infantry companies to determine if the guidance expressed met the criteria for successful employment of combined arms. It offers several conclusions as a result of this analysis. First, the fighting doctrine, though supportive of the complementary roles of dismounted infantry and armored vehicles, does not express its guidance in terms that emphasize the importance of these concepts. Leaders understand the imperative to combine the various arms without comprehending how and why this employment technique is successful. As a consequence, the training doctrine, especially regarding vehicle gunnery, places a premium on a *reinforcing* effect (Bradley gunnery) of combined arms at the expense of dismounted proficiency. This disconnect means that mechanized infantry units do not structure and resource their training programs to capitalize on the complementary effects of combined arms. Since they are not enunciated, understanding

of these complementary effects is limited, and preparation for their employment is lacking.

## Chapter 3

## Analysis and Recommendations

The preceding sections of this monograph have demonstrated that both historically and doctrinally, mechanized infantry's most important contribution to the combined arms team is dismounted maneuver and not mounted firepower. In the first chapter, both theory and practice demonstrated the validity of the principle of complementary combined arms. The accompanying account of the Israeli Army's neglect of infantry's primary dismounted role further highlighted the consequences of a gunnery-focused training methodology. The IDF succeeded only when it relearned the lesson that the purpose of infantry is to fight on the ground. An examination of U.S. doctrine followed, showing that the Army's advocacy of these effects to achieve tactical success does not receive a concomitant emphasis in training. Gunnery requirements force Bradley units to focus on mounted firepower at the expense of dismounted operations. Having said this, the question remains: Where is the U.S. mechanized infantry force today? This chapter answers the question by examining recent experience to determine the current state of infantry training, followed by recommendations to correct the apparent dichotomy between how we say we will fight and actually prepare to do so.

"Clearly, the Bradley platoon is the greatest training challenge for the infantry."[101] This statement appeared in a "Commandant's Note" by MG John Foss, Chief of Infantry, in July 1985. Published in *Infantry*, the article summarized Bradley lessons

learned following two years of experience with eight modernized infantry battalions. General Foss used this forum to address problems identified and the solutions to them adopted by the Infantry School. He concludes, however, by articulating a final concern for which the school had yet to find an answer:

> The BFV and its on-board weapons form a complex mechanical system. The young leader at squad and platoon level is hard-pressed to master both the vehicle and the associated mounted combat skills while simultaneously mastering dismounted tactics. The challenge facing units is to balance their training on mounted and dismounted skills.[102]

The dilemma over where to place the training emphasis reflects the constant tension generated by the previously identified competition between the fighting and training doctrines. Since this tension materially affects how the infantry currently trains, it is worth examining how this competition evolved in the infantry's branch literature.

The introduction of the BFV was heralded as a revolutionary, not evolutionary, milestone in the development of the mechanized infantry force. This viewpoint tended to predominate in the early years of Bradley fielding (from approximately 1981 through 1985), as fascination with the vehicle's technical capabilities tended to overshadow its transportation function. According to the Infantry School's Director of Combined Arms and Tactics, "It is the increase in vehicle capability and complexity that has led to fundamental changes in the way infantry does business."[103] Altered conditions on the battlefield are not mentioned; the Bradley itself is perceived as the agent of change. This technological preoccupation is echoed by another author, also a member of the school faculty, "Both offensive and defensive (either mounted or dismounted) tactics must be built around the IFV."[104] In both of these school-sponsored primers on Bradley infantry,

the emphasis centers on employing the vehicle to take advantage of its firepower. The complementary role of the unit's dismounted infantry is subsidiary to the reinforcing effect of the BFV's weapons. Even General Foss states that "The platoon moves and fights mounted whenever possible."[105]

This focus on mounted combat resulted from the infantry force's reaction to the complexity of the BFV's turreted weapons. Integrating this "complex mechanical system" and its capabilities into mechanized training presented a previously unknown challenge to the infantry. As a result, BFV unit performance trends at the training centers indicated that dismounted skills were in a decline, and that commanders and staffs tended to relegate them to a background role. "On the modern battlefield, the TF commander and S3 often forget the unique abilities of dismounted infantry."[106] This trend, recorded by CALL at approximately the same point in time as General Foss's identification of the training challenge, initiated the Army's recognition that the focus of mechanized infantry had shifted. A letter prepared by the CG of the NTC to the Combined Arms Center (CAC) commander in 1985 stresses the importance of dismounted infantry and the difficulty inherent in its training. "The longer I serve, the more impressed I become with both the importance and the difficulty of basic infantry tasks."[107] His point being that this valuable asset was not used to good effect at the NTC.

These same trends continue to be noted as more and more Bradley units rotated through the training center. In 1988, LTG Bartlett, CG of CAC, attempted to focus the attention of division commanders on recurring trends noted by the NTC since 1983 in

order to "re-emphasize those critically important lessons which still require work by our units."[108] He specifically addressed the issue as follows,

> The weakest part of the TF is the training of mech infantry platoons. Their ability to transition from mounted to dismounted operations supported by carrier teams requires additional training emphasis.[109]

This statement expresses the heart of the problem. Here, mechanized platoon *training* is the *weakest* part of the task force, with the specific fault ascribed to its complementary, dismounted role. This trend is also identified in a special study of dismounted infantry by the NTC observer group. "Dismounted fire and maneuver whether with or without tracks is executed very poorly."[110] Again, these observations represent long-term trends, based on a growing sample size of mechanized infantry units. After five years of Bradley fielding, the emphasis on gunnery had exacted a toll on the training of the infantryman. Slowly, the force began to realize that change was needed.

This modification was initiated by the Infantry School in 1988 based on recommendations from the field. In that year, a White Paper addressed the "doctrine, force design, leader development, and training strategies" of BFV-equipped infantry units.[111] The field reviewed the White Paper from 1988 to 1989, and its input was combined with information from focused CTC rotations and infantry school assessment teams. The result was a reorganization of the Bradley platoon announced for implementation by MG Michael Spigelmire, Chief of Infantry, in January 1990.[112]

The fundamental aspect of this reorganization was the decision to separate the functions of dismounted and vehicular leadership. Dismounted squad leaders and BFV commanders henceforth had divided responsibilities. The squad leader no longer served as

both a BFV commander and a dismounted team leader. The revision provided "a new force structure that focuses leadership for dismounted and mounted operations or for training."[113] This shift in focus resulted from field input provided mostly by the 3d Infantry Division as a result of its long-term Bradley experience. 3ID's input highlighted the difficulty encountered by the squad leader in developing, conducting, and evaluating both types of training.[114] This and other examinations also pointed out the same split focus on the part of platoon leaders.[115] The resulting platoon reorganization meliorated the problem, but the following indications from the field indicate that dismounted training is still inadequate.

Articles by serving Bradley force leaders and CTC trends continued to stress the competition between dismounted and gunnery training. A platoon leader summarized it as follows, "The essence of the challenge is in overcoming the dichotomy between the mounted element and the dismounted element and forming the two into one team."[116] He further cites many of the reasons for this phenomenon. "Squad training requirements for the dismount soldiers are especially difficult for a Bradley unit, because crew slots take priority." A further contributor to dismounted performance is the unit's preoccupation with gunnery, as "everyone in the platoon, from private to lieutenant, tends to focus upon the vehicles."[117] The Infantry School's answer could not overcome the earlier technical concentration perpetuated by the requirements contained in STRAC and FM 23-1.

Company commanders express the same problems in the post-reorganization era. Gunnery "takes away from the dismounted elements' training: the soldiers in the

dismount element *traditionally* (own italics) provide range support so the mounted crews can concentrate on gunnery."[118] One result of this emphasis is the creation of the perception that "Dismounts are often looked upon as second class citizens."[119] A further contention is that award policies based on gunnery scores as well as the tendency of BFV units to focus on mounted maneuver highlight the dismounted element's "subordinate image."[120]

Sub-standard training of dismounted infantry precludes them from making their complementary contribution to combined arms warfare. This is evident as recently as the publication of the First Quarter, 1995 CTC Trends for the NTC. This compilation repeatedly states that dismounted infantry employment is a major shortcoming at all levels. Further observations assert that dismounts are not assigned a clear task and purpose, precluding their integration into the overall scheme of maneuver.[121] Most significantly from a combined arms standpoint, there is a lack of integration of the complementary effect of the dismounts with the firepower of armored vehicles. "Dismounted operations are not conducted as a BFV-dismounted team." As a result, their employment "contributes little to mission success" in mech infantry and armor task forces.[122]

The preceding discussion highlights several shortcomings in the training of the mechanized infantry force. Acknowledged by Army leadership since 1986 as "the greatest training challenge for the infantry," at the company level it still constitutes the major problem for junior leaders.[123] Though many measures were tried, none of them were successful. The following section offers some practical solutions to this problem,

with the ultimate goal of increasing the infantry's ability to generate complementary effects to attain synergy on the combined arms battlefield.

Recommendations

The crux of the dismounted training problem centers on the resolution of two issues. First, company commanders and platoon leaders must become more fully integrated into infantry training to ensure that the unit's dismounted proficiency receives a high priority. Second, this increase in dismounted proficiency must occur in a training context that prepares the infantryman for his complementary role in the combined arms team. To this end, the following solutions are offered.

First, remove the company commander and platoon leaders from the primary crews of their respective BFVs and assign them as alternate crew members. This mitigation of their individual gunnery training and qualification requirements will allow them to devote greater attention to the planning and supervision of both mounted and dismounted training. The resulting focus on platoon and company collective activities coincides with their training responsibilities specified in FM 25-100 and 25-101.[124]

To complement the increased collective focus on the part of the unit's officers, the noncommissioned officers should receive greater responsibility for the planning and execution of gunnery training. FM 25-101 states that "NCOs also have responsibility to train sections, squads and crews."[125] Bradley Table VIII, Crew Qualification, should be the primary responsibility of the unit's NCOs. They should plan, prepare and execute training up to and including this event. This will allow officers to concentrate on collective activities integrating both mounted and dismounted operations.

A further recommendation is to eliminate the current thousand-point gunnery scoring system and associated ratings of Distinguished, Superior and Qualified. This measure decreases the pressure on unit leaders to sacrifice collective readiness to achieve higher gunnery scores. The Draft version of FM 23-1, Bradley Fighting Vehicle Gunnery, advocates a new scoring system designed along these lines. Each engagement is assessed as Trained (T), Needing Practice (P), or Untrained (U) based on Go/No-Go criteria for gunnery sub-tasks. It then assigns crew qualification ratings of Distinguished, Superior, or Qualified based on the number of T, P, and U ratings achieved.[126] By retaining the qualification ratings, however, the competitive scoring pressure is retained. The new scoring system is a step in the right direction, but should eliminate the ratings and replace them with a crew evaluation of either Qualified or Unqualified. This would meliorate most, if not all, of the competition inherent in gunnery qualification and allow a savings in resources, as well. By reducing the emphasis on gunnery scores, ammunition and money saved as a result could be turned toward combined arms training with dismounts, increasing unit capabilities with no net increase in expenditure.

The goal of the final set of recommendations is to increase the complementary aspects of mechanized infantry training. Infantry units must expand their ability to contribute to the synergy of combined arms. To accomplish this, armor/infantry integration requires greater emphasis during training. Further, all soldiers must understand how this integration is achieved.

A recommendation contained in the Draft of FM 23-1 is to eliminate the mandated target and range requirements from the current FM 23-1 and give this responsibility to

individual commands.[127] The aim of this option is to allow *units* to develop gunnery programs to "Give division commands latitude to tailor engagements to contingency mission profiles and/or training emphasis." Accordingly, the units determine the target type and engagement range.[128] This change facilitates combined arms warfare by allowing the development of separate gunnery engagements for tanks and BFVs to facilitate truly reinforcing fires.

An additional recommendation is to go one step further on these lines. FM 25-100 states that units should "train as they fight" in a combined arms environment, employing the techniques they will use in combat.[129] For mechanized infantry and armor, this means earlier and more frequent integration during training. In practice, this would include the combination of tanks, BFVs, and infantry during all post-Table VIII (crew qualification) gunnery events, to be fully resourced by STRAC. Specific operations would include a tank section / BFV section / infantry squad exercise, followed by a combined arms exercise at platoon level. Increased inter-operability combined with a greater understanding of simultaneous employment and mutual support would be the result, key ingredients of combined arms warfare.

Finally, the infantry force must eradicate the perception that dismounted soldiers are somehow inferior to BFV crewmen. BFV crews are currently hand-picked for gunnery talent and sequestered for longevity.[130] As a result, both dismounted infantrymen and BFV crews fail to gain the mutual appreciation of each others' capabilities and limitations required for the genesis of mutual support. To remedy this, these elements should rotate following each semi-annual gunnery density. A marginal decrease in gunnery proficiency

would possibly result, but the ability of the infantry to provide complementary support to armor, its central battlefield focus, would increase accordingly.

This chapter examined the current state of infantry training and assessed its ability to participate effectively as a member of the combined arms team. Based on input from the field, the weight of evidence suggests that, in fact, the dismounted infantryman is not prepared to participate in complementary, simultaneous operations of all arms. Accordingly, the monograph offered several recommendations to correct this deficiency by broadening the focus of unit leadership and modifications to training practices. In the following section, the paper will conclude by summarizing the evidence and arguments, and offer some observations on the general state of combined arms warfare at the tactical level.

## Conclusion

This monograph began with the basic premise that combined arms warfare is the cornerstone of the U.S. Army's tactical doctrine, and that to be successful, it must incorporate the complementary effects of the various arms in order to produce mutual support, the aspect of combined arms warfare that produces synergy. At the battalion and company levels, this means that infantry and armor must operate simultaneously, with dismounted infantry and tanks complementing their respective abilities to fire and maneuver. The thesis of the monograph is that since the introduction of the Bradley Infantry Fighting Vehicle in 1983, the training of the mechanized infantry force has ignored the fact that its primary contribution to synergistic combined arms is through its ability to introduce its dismounted component into a fight alongside its armored

teammate. Only through this means is the enemy presented with a "dilemma" of facing an opponent able to present him with "effects that neither can attain separately."[131] Instead, a misdirected focus on vehicle gunnery, a reinforcing effect, has diluted the effectiveness of the infantryman until his unique contribution is "often forgotten."[132]

The monograph initiated its proof by tracing the development of the combined arms consensus that began in World War II. Here, two prevailing schools of thought clashed in combat for the first time, resulting in the defeat of the "all-tank" view of armored, protected firepower at the hands of the synergistic *Wehrmacht*. At the close of the war, every major armored combatant shared the perception that to be successful, articulated combined arms formations that relied on complementary effects were the order of the day.

The chapter included an historical example that detailed the experiences of an army that took a similar approach to combined arms as the U.S. Army's current training methodology suggests. The Israeli Army, a well-trained force, nonetheless suffered several setbacks due to its failure to acknowledge the requirement for mutual support on the mechanized battlefield. In combat they succeeded only after overcoming their reluctance to place their confidence in the infantry's ability to fight on the ground alongside their armor. The section concluded with a discussion that highlighted the influence of technology on combined arms. It emphasized that though technical factors have altered the capabilities of the infantryman, no change in battlefield conditions since WWII have warranted a shift in his basic function.

Next, the paper presented an overview of pertinent U.S. Army doctrine. It pointed out the disconnect between how the Army says it intends to fight and the methodology it employs to train its mechanized infantry force. Gunnery requirements and leadership challenges combine to produce a force trained to shoot well, but limited in its ability to generate synergy.

The final chapter of the monograph examined the current state of dismounted infantry training and integration in terms of its ability to complement armor on the battlefield. Repeatedly, comments from commanders and CTC observers stressed the poor state of dismounted training due to a disproportionate emphasis on gunnery generated by technological preoccupation. This section concluded with specific recommendations on how to solve the leadership dilemma confronting infantry commanders and the lack of integration of mounted and dismounted elements -- two key factors mitigating the infantry's ability to train for complementary combined arms warfare.

In conclusion, two ideas are presented to stimulate thought regarding the Army's tactical approach to the employment of combined arms. The U.S. Army has not published a detailed definition of combined arms and their effects since the 1982 edition of FM 100-5. This version explains the relationship of complementary and reinforcing effects to the development of mutual support, necessary for the attainment of synergy. The 1982 version leaves the reader with a clear understanding of the components of combined arms, both technical and tactical, as well as how these components interact to generate the success their employment suggests. Since that time, the doctrinal expression of these concepts has waned. Current manuals, from FM 100-5 down to FM 7-7J, lack

an explicit definition of combined arms warfare and how, in detail, the use of combined arms is expected to facilitate battlefield success. While consensus exists for the value of combined arms warfare, organizational and private publications lack a clear comprehension of why this is true.

An interesting question to consider is whether or not the current mechanized infantry training dilemma would exist if the theoretical basis for combined arms operations received greater emphasis in our fighting and training doctrines and institutions. With a clearer understanding of these concepts, this paper asserts that training priorities could be fixed in their proper context. The Army needs to understand what it means when it talks about combined arms in order to plan to achieve those effects in training and in combat.

A final consideration is the way that combined arms forces conduct training. Armor units are the repository for the preponderance of the Army's direct firepower; the destruction of enemy armored vehicles is their primary training focus. For a Bradley infantry battalion to have the same gunnery requirement as a tank battalion is, bluntly, expecting the infantry to do more than its fair share in the combined arms fight. Armored firepower is not the basis for the infantry's ability to complement the tank. Perhaps it is time for the infantry, as a branch, to openly acknowledge this fact and state its intent to refocus itself on its primary contribution -- dismounted combat *as a part* of the combined arms team. Gunnery, an important aspect of infantry training, should be placed in the perspective suggested by this paper. The development of a program of *combined arms gunnery*, employing a *holistic* approach to the tasks and purposes of the various arms, would go a long way towards achieving this goal.

The issue of training for combined arms warfare centers around the Army's definition of it. If, in fact, the belief remains that it refers to "two or more arms in mutual support to produce complementary and reinforcing effects that neither can obtain separately,"[133] then the emphasis for infantry training is clear. While the BFV can reinforce tanks in the direct fire fight, only the infantry*man* allows the mechanized force to produce effects that the tank can not achieve alone. Applied to training, this should constitute the point of departure for our doctrine and practice.

Figure 1: BFV and Tank Gunnery Requirements from DA PAM 350-38 (STRAC)

| BFV UNIT | | ARMOR UNIT | |
|---|---|---|---|
| TABLE | FREQ | TABLE | FREQ |
| PGT | 12 | | |
| BGST | 2 | | |
| COFT | 12 | UCOFT | 12 |
| I-IV x 108 Crews | 4 | III-IV x 58 Crews | 4 |
| V A/B x 108 Crews | 2 | V x 58 Crews | 2 |
| Zero x 54 Crews | 4 | | |
| VI A/B x 66 Crews | 2 | VI x 58 Crews | 2 |
| VII A/B x 54 Crews | 2 | VII x 58 Crews | 2 |
| VIII A/B x 54 Crews | 2 | VIII x 58 Crews | 2 |
| TOW Qual x 66 Crews | 2 | No Equivalent | |
| Dismounted LFX x 12 Plts | 2 | No Equivalent | |
| Bradley Squad/Section Ex (BSSE)x 12 Plts | 1 | No Equivalent | |
| XI A/B x 12 Platoons | 2 | XI x 12 Platoons | 2 |
| XII A/B x 12 Platoons | 2 | XII x 12 Platoons | 1 |
| PGT = Preliminary Gunnery Tng and is conducted monthly<br>BGST is conducted prior to LFX<br>COFT recommended at 4 hrs/ crew every other month<br>12 = 4 plt vehicles x 3 plts<br>Requirements are annual | | NOTE:<br>No requirements for TOW Qual in armor units or requirement to qualify Plt Ldr alternate crews as in BFV units.<br>BSSE and Dismounted LFX also not required; only 1 TTXII required per year | |

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